

We claim:

1. A method for inhibiting growth or differentiation of an epithelial cell comprising contacting at least an epithelial cell with an effective amount of an agent selected from the group consisting of a hedgehog antagonist and a patched antagonist.

2. The method of claim 1, wherein the hedgehog antagonist is an anti-hedgehog antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.

3. The method of claim 1, wherein the patched antagonist is an anti-patched antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.

4. The method of claim 1, wherein the hedgehog antagonist is a hedgehog mutant that binds to a hedgehog receptor but does not elicit hedgehog-mediated signaling.

5. A method for inhibiting growth of an epithelial tissue comprising contacting at least the epithelial tissue with an amount of an agent effective to inhibit proliferation of at least the epithelial cells in the tissue, wherein the agent is selected from the group consisting of a hedgehog antagonist and a patched antagonist.

6. The method of claim 5, wherein the hedgehog antagonist is an anti-hedgehog antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.

7. The method of claim 5, wherein the patched antagonist is an anti-patched antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.

8. The method of claim 5, wherein the hedgehog antagonist is a hedgehog mutant that binds to a hedgehog receptor but does not elicit hedgehog-mediated signaling.

9. A method for inhibiting growth of hair on an animal, comprising treating the animal with an amount of an agent effective to inhibit growth of hair, wherein the agent is selected from the group consisting of a hedgehog antagonist and a patched antagonist which inhibit proliferation of hair follicle keratinocytes.

10. The method of claim 9, wherein the hedgehog antagonist is an anti-hedgehog antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.

11. The method of claim 9, wherein the patched antagonist is an anti-patched antibody homolog selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof

12. The method of claim 9, wherein the hedgehog antagonist is a hedgehog mutant that binds to a hedgehog receptor but does not elicit hedgehog-mediated signaling.

13. The method of claim 1, wherein the epithelial cell is a cutaneous epithelial cell.

14. The method of claim 1, wherein the epithelial cell is a dermal keratinocyte.

15. The method of claim 1, wherein the epithelial cell is a mucosal epithelial cell.

16. The method of claim 1, wherein the epithelial cell is an epithelial stem cell.

17. The method of claim 1, wherein the epithelial cell is a hair follicle stem cell.

18. The method of claim 1, wherein the cell is treated in an animal and the agent is administered to the animal as a therapeutic composition.

19. The method of claim 5, wherein the epithelial tissue is treated in an animal and the agent is administered to the animal as a therapeutic composition.

20. The method of claims 1 or 5, wherein the agent is applied topically.

21. The method of claims 2, 6, or 10, wherein the anti-hedgehog antibody homolog is
5 an antibody homolog that binds to a *Sonic hedgehog protein*.

22. The method of claims 2, 6, or 10, wherein the anti-*hedgehog* antibody homolog is
an antibody homolog that binds to an Indian *hedgehog protein*.

10 23. The method of claims 2, 6, or 10, wherein the anti-*hedgehog* antibody homolog is
an antibody homolog that binds to a Desert *hedgehog protein*.

24. A method for inhibiting the proliferation of hair follicle cells, comprising
contacting the cells with a hedgehog antagonist or a patched antagonist in an amount
15 effective to decrease the proliferation of the hair follicle cells

25. The method of claim 24, wherein the hedgehog antagonist is an anti-hedgehog
antibody selected from the group consisting of a human antibody, a chimeric antibody, a
humanized antibody and fragments thereof.
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26. The method of claim 24, wherein the patched antagonist is an anti-patched antibody
homolog selected from the group consisting of a human antibody, a chimeric antibody, a
humanized antibody and fragments thereof

25 27. The method of claim 24, wherein the hedgehog antagonist is a hedgehog mutant
that binds to a hedgehog receptor but does not elicit hedgehog-mediated signaling.

28. A preparation of an anti-hedgehog antibody homolog or anti-patched antibody
homolog formulated for topical application to epithelial tissue.
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29. The preparation of claim 28, wherein the antibody is selected from the group consisting of a human antibody, a chimeric antibody, a humanized antibody and fragments thereof.